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ABSTRACT

This interdisciplinary unit focuses on five techniques found in the textile arts of India: tie-dye, embroidery, applique, block printing, and weaving. The unit is designed for students in third through sixth grades but could be adapted to other levels. This unit could be incorporated with a study of India's land, history, and geography. The textile overview provides a general context within which the textile projects can be presented. The unit is divided into six parts: (1) "Focus"; (2) "Textile Overview"; (3) "Curriculum Projects"; (4) "Reference List"; (5) "Appendices"; and (6) "Slides and Slide Identification" (the 34 slides described are not included with ERIC's copy). (EH)

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ED 401 171

CURRICULUM PROJECTS DEVELOPED
by
1995 SEMINAR PARTICIPANTS

TEXTILE ARTS OF INDIA
CURRICULUM PROJECT

By
Barbara Myers

Submitted to
Educational Resources Information Center (ERIC), USDE

Submitted in fulfillment of requirement
for Fulbright Hays Fellowship
Understanding India And Her Ethos
November, 1995

SO 026 041

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FOCUS

This curriculum packet focuses on five techniques found in the textile arts of India: tie-dye, embroidery, applique block printing, and weaving.

This curriculum packet is intended for classroom use in third through sixth grades. Art teachers can use this packet to introduce students to the textile arts of India. Classroom teachers can use this packet to supplement and reinforce social studies or geography units which focus on India.

Many of the art projects can be easily adapted for kindergarten through second grades.

The textile overview, is not meant to be a complete outline of the history of India. It is written in order to provide the teacher with a general context within which the textile projects may be presented.

EARLY EVIDENCE OF INDIAN TEXTILE ARTS

Textile production has existed in India since prehistoric times. At the archaeological site of Mohenjodaro, an ancient city in the Indus Valley, woven and madder-dyed cotton textile fragments from 2,500 B.C. have been excavated. The presence of dye vats and the use of madder-dyed and mordant treated materials, indicate that the Dravidians, the inhabitants of Mohenjodaro, had a thorough knowledge of cloth dying techniques. Also found at the site were clay spindles, bronze needles and sculptured figures wearing patterned clothing. From this, one may conclude that textile production, including cotton growing, spinning, weaving and dyeing was in existence. Trade between Mohenjodaro and Persia, Mesopotamia and Egypt was taking place at this early time.

Early pieces of Indian literature make references to the textile arts. The Hindu epics, the Mahabaharata and the Ramayana written 2,500 years ago, mention the production and uses of cotton, linen, silk and wool textiles. The Mahabharata speaks of the shawls from Gujarat and the muslins from Mysore. The Vedas, the sacred books of Hindu mythology, written between 1300-600 B.C., speak of the art of weaving. The stories about the life of Buddha, written in the Jatakas, in the 6th century B.C., speak of the textile arts.

The Ajanta and Ellora cave fresco wall paintings dating back to the second century B.C. until the middle of the fifth century A.D., depict examples of elaborately patterned clothing. This art work indicates that the inhabitants had a thorough knowledge of resist printing, tie-dyeing, ikat and brocade weaving.

TEXTILE OVERVIEW

The centuries of warfare, invasions, migrations and colonization of India, has resulted in the intermingling of peoples. The styles, colors, designs, traditional patterns and techniques of Indian textiles, reflect the diversity of its people.

Between 2000 B.C. and 1000 B.C., the Dravidian people were invaded by tribes of Aryan herdsmen from Persia. The Aryans settled in the basin of the Ganges River where they formed an agricultural society. During the following centuries the Aryan civilization spread throughout northern India.

As early as the second century B.C., India was receiving silk from China through a trade route which linked the east and the west. The "silk road", as it was to be called, went from China through the desert and over the mountains. Goods were exchanged caravan style, at particular oasis points.

It is said that silk was first brought to India, by a Chinese princess. She smuggled silkworm eggs to an Indian trader at some point along the silk road. The trader brought the eggs to India. The muga caterpillar, living in the humid Indian, Assam Valley, produces a strong golden silk, which is spun like cotton. In India, silk is considered a holy cloth. A Hindu

corpse is covered with silk as a sign of respect. An Indian women is married in a silk sari, which can be from five to nine yards long.

In the 6th century B.C., two religions, Buddhism and Jainism were founded in eastern India, establishing the country as a holy region. This brought pilgrims from all over the world to India. The silk road was used by religious teachers, who carried the teachings of their religions from India to China.

In 326 B.C., Alexander the Great of Greece conquered India. This opened up trade opportunities between India and Asia Minor and the Mediterranean. Alexander lost control of India when Chandragupta, established the Maurya dynasty in northern India. The grandson of Chandragupta, Asoka, ruled as emperor from 274 B.C. to 232 B.C. He ruled peacefully, sending Buddhist missionaries to other countries, spreading religious tolerance and Indian culture throughout Asia.

As kingdoms were founded and as kingdoms expanded, trade between cities and countries developed. Overland and coastal sea trade and commerce routes carried Chinese silk to India and sent Indian cotton, indigo, muslins and yarn to Egypt, North Africa, Greece and Rome, Celon, Berma, China, Arabia, Persia, Mesopotamia and South East Asia.

The period from 320 A.D. to 470 A.D. is known as the "golden age" of India. Chandragupta 11, who ruled northern India, encouraged study and the development of the arts. Invasions from the Huns, brought this period of peace and serenity to an end.

For the next several hundred years, many kingdoms flourished in southern India. In east India, trade with Siam and Java was growing.

In the 11th century, the Muslim Kingdom of Delhi was founded in northern India. Court artists were challenged to invent, assimilate, adapt and absorb into their techniques, textiles and clothing for court uses. It is said that the court employed four thousand weavers, producing hundreds of thousands of garments each year. Trade flourished and expanded during the reign of the sultans.

In 1398 Tamerlane invaded the Muslim Kingdom, splitting northern India into many small kingdoms. In southern India, the Hindu empire of Vijayanagar held control until 1565.

1526 marks the beginning of the Mughal Empire. Under the reign of Akbar, royal workshops and craft schools were set up for artists. Akbar imported Persian artisans to work in his court and design rugs, embroider tent decorations, paint interior cotton hangings and weave curtains and clothes. The influence of Islamic design is clearly seen in the Indian textiles from this period.

People of the Mughal court wore gold embroidered fabrics of finely woven, exquisitely designed muslin. The linear patterns were often delicately shaded, floral motifs. The cloth designs were given special names such as, flowing water, evening dew and woven air. Patola silk sari cloth was traded to Indonesia and Malaya to be used for court clothing. During this period and through the 17th century, Indian textile exports

increased.

The Mughal courts of Delhi carried the royal textile arts to a level of exquisite delicacy and fineness. The tie-dyed cloths produced during the time of the Mughal Empire were prized by royalty. They were dyed in colorful stripes and patterns on thin muslin cloths and then printed with gold and silver leaves. Gujarat became a prosperous trading center. The Mughal ruler Aurangzeb reigned from 1618 until 1707.

In 1498 Vasco da Gama discovered the sea route to India. Textile production increased with the arrival of Portuguese, Dutch, French and British traders who competed for control of trade of Indian cotton goods. In 1757, The British East Indian Company took control of the Ganges valley region, establishing the area as an important trading center. Embroideries, printed cloth and indigo were traded from Gujarat, shawls from Kashmir and silks and muslins from Bengal.

By the end of the 1700's, Indian textiles were in great demand in Britain. The British East India Company became powerful and wealthy, building textile factories and carrying Indian goods to Great Britain, Holland and France. As inland traffic networks improved, large Indian cities were also exchanging goods.

Indian textiles were becoming popular in Europe in the design of clothing, wall hangings and painted cotton cloths. These articles were unique in their design, color and use of fadeless dyes. Fast-dyed, multi-colored, Indian hand painted and printed cottons called chintzes, were in great demand. Indian textile popularity was so great, that British laws were established restricting the importation of Indian calico.

The deterioration of Indian textile techniques began with the introduction of Western industrial methods. The Industrial Revolution led to the invention in 1733 of the shuttle, and in 1779 the Mule Spinning Machine. These inventions made it possible for Britain to spin and weave fine threads with great speed. This contributed to the decline of Indian artisan textile production.

As British colonization of India expanded, the British East Indian Company took over more and more Indian territory. British economic exploitation of India increased. Raw Indian cotton was used to mass produce imitation Indian textiles in British factories. These machine manufactured British textiles were then sold to Indian buyers. In the early 1800's, more British textiles were exported to India than those products made in India for export. This resulted in the decline and destruction of Indian made handicraft items.

In addition, heavy taxes were imposed on Indian manufactured muslin, calico and cotton, while much lower tax rates were required for items produced in Great Britain. The result of this imbalanced taxation system was devastating to the Indian economy. Jawaharlal Nehru led a campaign against Great Britain's exploitation of India, which was leading to economic disaster.

Indian resentment of the British resulted in the Sepoy Mutiny of 1857. This failed Indian effort to combat British exploitation had important consequences. In 1858, the British

Government took over the East India Company's empire, and in 1877 Queen Victoria became the Empress of India.

In 1885, the Indian National Congress was formed. This political party campaigned for and inspired India's drive for independence. In 1906 the Moslem League was established. The Moslem League wanted to separate from Hindu India and form an independent Moslem state.

After World War I, the desire for Indian independence increased. Mohandas K, (Mohatma) Gandhi, who led the resistance movement against Great Britain, campaigned for nonviolence and self rule. He encouraged the Indian people to boycott British textile products. This inspired a growing interest in the conscious use of Indian made products. Gandhi supported the growth and development of village handicrafts and the return to the traditional, ancestral arts of spinning and weaving.

Handwoven cloth from cotton which was grown and spun in India, became the symbol for Indian independence. This encouraged textile art production, inspired commercial Indian textile co-operatives, and reinforced the idea of pride, self sufficiency and independence. India became independent from Great Britain in August 15th, 1947. India was partitioned into two nations, India, and the Muslim state of Pakistan.

Since independence, there has been a revival and resurgence of Indian textile production. There is a growing interest in the continuation of inherited techniques and national designs. Government organizations have been established to help artists with production and marketing. The All India Handicrafts Board, The Institutes of Handloom Technology and The Weavers Service Centers, educate artists and perpetuate the growth of handicrafts throughout India.

THE CASTE SYSTEM

The textile arts of India were not a response to fashion, but were part of the ritual of generations. The Indian craftsman belonged to hereditary guilds which existed as part of the caste system's division of labor. These guilds encouraged specialization and the perpetuation of hereditary skills.

The textile artist holds an important place within the Indian society. Through his art, he passes on the cultural traditions and identities of particular castes. The shoes, jewelry, and clothing which he makes, are distinct objects of identification. Through his use of stitch, symbol, imagery, form and color, the textile artist carries on the traditional history of past generations.

COLOR

One of the outstanding characteristics of Indian textiles is the use of color. The colors chosen by the Indian artist, are often a direct response to his natural environment. In the desert regions, where surrounding colors are subdued, the resist, tie-dyed fabrics take on a brilliant palette of colors. Some of the tie-dye cloth of Rajasthan, is composed of red and

yellow patterns, which glitter like the sun. In the forest areas, where the colors of the brilliant foliage dominate the natural environment, color is secondary to the formal patterns which dominate the designs of textile art.

Color sensitivity and an understanding of color chemistry has produced Indian cloths of exquisite beauty. The textile fragments found in 2,500 B.C. at Mohenjodaro, show knowledge of the use of mordents in dyeing cloth. A mordent is an intermediary substance which is added to, or combined with the dye. The mordent fixes and makes permanent the color on the fabric.

There are more than three hundred dye yielding plants which grow in India. These dyes are not applied to the surface of the cloth, but are dyed into the threads or yarns before they are woven. Al root and madder root produce reds, pomegranate peel produces blacks, indigo produces blues, tumeric produces yellows and pomegranate rind produces greens. These natural vegetable ingredients respond to and react to the sun's rays, which gives the fiber color a living vibrancy.

. Color use in India has a symbolic significance. Saffron yellow is the color of spring. Red is the color of love. Black and maroon are the colors of mourning and blue is the color of the gods Vishnu and Krishna. White is the color of the god Shiva.

RELIGION

There has been a history of a relationship between religious tradition and Indian village textile design. The need for textile art worthy of presentation to the gods, brought about excellence in technique and design. This encouraged the development of craft schools in religious centers.

Wood block printed or painted temple cloths called Pachedi, were produced in Gujarat. These cloths became open air shrines and were used in outdoor religious ceremonies.

Religion also influenced the clothing a person wore. Traditional ritual requirements dictated the clothing of a bride, a pregnant woman, a woman in mourning or a widow. The Moslems taboo against wearing pure silk, led to the creation of Mashru, a half cotton, half silk fabric.

TIE DYE

Tie-dye is one of the oldest fiber art techniques. The tie-dye process is a resist technique which involves tying portions of the cloth with strings before dipping the cloth into the dye vat. The areas to be tied, are usually pushed up from the under portion of the fabric. The strings, when untied, reveal the portions of cloth which were protected from the dye. These areas remain uncolored and form a pattern. The process is repeated, going from light colors to dark colors.

Sometimes, tye-dye artists grow the fingernails of their thumb and forefinger very long, so that they function as a tweezer. This enables the artist to pull up tiny portions of cloth, which are then tied with string. The term "bandhani" refers to the process of tie-dye and the finished, tie-dyed textile.

Gujarat and Rajasthan are famous for their beautiful tie-dye work. Gujarat textile artist's produce gharcholu bride's veil. The groom presents the veil to his bride as a wedding gift. Gharcholu is made of red cotton cloth, which is patterned with gold checkers, animals, geometric shapes and colored tie-dye knots.

The ikat technique is a variation of tie-dye. Ikat warp and weft threads are dyed separately by the tie-dye process, before the threads are woven. Both Gujarat and Orissa specialize in ikat tie-dying.

Mashru tie-dye cloth is created with both silk and cotton threads, which are dyed before the weaving process. This cloth is made for Muslim men who are not permitted to wear silk against their skin.

Lesson Plan
Tie-Dye
Grades 4, 5, 6

Goal
Students will gain an understanding of the traditional textile arts of India.

Objective
Students will apply the technique of tie-dye by creating a tie-dyed piece of art work.

Materials needed
Any light to medium weight porous paper that will not fall apart when wet, such as grocery bags or heavy duty, or tissue paper
Rubber bands
Newspaper
Buckets of clean, clear water
Pieces of 12" by 12" white fabric
Red, yellow and blue food coloring
Scissors

Process
1. If working with cloth, wet the cloth thoroughly and ring it out.
2. Students locate the center of the fabric square.
3. Poke a finger up from the bottom of the cloth, and grasp the top of the cloth. This center, top section of cloth should be tightly bound, approximately $\frac{1}{2}$ " from the tip, with a rubber band. Continue binding the remainder of the circumference of the cloth with rubber bands, at desired intervals.
4. Using the food coloring bottles, squirt the dye on and around the rubber band areas. As you squirt the dye, you will notice that it spreads. This is because the fabric is wet.
5. After using as much dye as desired, let the dye set for several hours. You can evan allow the cloth to dry until the next art period.
6. When dry or almost dry, cut the rubber bands off of the fabric and rinse the cloth completely in cold running water.
7. When the cloth is opened, the repeated concentric circles will have formed a pattern. This design is called sunburst.
8. Allow the students to experiment with other creative ways of binding the cloth with rubber bands.

Notes to the teacher:
1. This is a long term project which should span several art periods.
2. This project should not be attempted without the availability of a water source. If you do not have an art room, or if you do not have a sink in the room in which you are doing this project, I would recommend that you save the project for another time.
3. Use food coloring, which can be purchased in any grocery

store. It is safe.

4. Before working with cloth, have the students experiment with paper. This will teach a students a degree of control over this unpredictable process.
5. Limit the color choices to three. I would suggest the primary colors, red, yellow and blue.
6. Cover each work space with newspaper. Food coloring can stain wood.

EMBROIDERY

Embroidery is a term for the ornamentation of cloth with needle and thread. Embroidery can be combined with other materials, such as beads, mirrors or shells.

Folk embroidery was traditionally done by village women. The styles of village embroidery were regional and specific to particular areas. Through distinct and unique combinations of stitch technique, color and the design of their clothing, ethnic groups could be identified.

The dowry tradition still exists in many villages. The dowry gift is made by the bride and the women in her family. It might contain, the bride and groom costume, domestic animal ornamentation and hanging textiles for the home. After marriage, when the bride moves into her new home, which she shares with her husband's family, she brings these embroidered textiles, as her dowry. These pieces are displayed at weddings and religious festivals.

In Punjab, the grandmother of the new born baby begins to embroider a bagh (garden). The bagh will be presented to her grandchild on his wedding day. If a boy grandchild is born, the bagh is stitched by the grandmother on his father's side of the family. If the grandchild is a girl, the bagh is embroidered by the grandmother on her mother's side of the family. The bagh is a valued heirloom and is kept in the family for generations.

The embroidery textiles from Saurashtra in Gujarat combined the darning stitch and the herringbone stitch with small pieces of mirror work. Mirror work is considered strong protection from evil. When the evil spirit sees its reflection in a mirror, it becomes frightened and runs away.

The chain stitch is considered to be one of the oldest embroidery stitches in the world. There are three methods of chain stitch used in India. The most common method of the chain stitch is with an ari, a tool which resembles a small cobbler's awl. Embroidery designs are first drawn and then embroidered. The background is filled in with long lines of chain stitches. Village mirror embroidery is ari embroidered.

Tambouring is another form of the chain stitch. A tambour is a drum-shaped frame over which fabric is stretched. Chain stitches are made with a tambour hook. The needle and thread chain stitch is the least used chain stitch in India.

The Phulkari embroidery from Punjab is made of silk threads which are embroidered from the back. These meticulously embroidered images of the sun, Hindu gods, peacocks and stars, are highly valued and are kept as family heirlooms.

Lesson Plan
Embroidery
Grades 4,5,6

Goal
Students will gain an understanding of the traditional textile arts of India.

Objective
Students will be able to apply the technique of embroidery by creating an embroidered piece of art.

Materials Needed
A piece of fabric 12" by 12"
Embroidery threads-many colors
Paper cut 12" by 12"
Scissors
Pencil
Crayons
Embroidery hoops (optional)

Process
1. Students draw and color a picture of an object on paper. For students who are experiencing embroidery for the first time, I suggest a simple object, such as, a piece of fruit, a flower, a bird, a tree or the student's initials. Allow students to experiment with several drawings.
2. Student and teacher discuss the drawings and choose the one which is most appropriate for the embroidery process.
3. Student reproduces the chosen drawing on a piece of fabric. When duplicating a drawing onto fabric, don't use water based marker. Use hard lead pencil. It is least likely to smear and it can be erased.
4. Frame the fabric design with an embroidery hoop.
5. Students chose the thread colors which are needed for the embroidery.
6. Students thread needle. I suggest using a double thread, because it covers more space and allows for quicker progress. Be sure the student knots the end of the thread.
7. Begin the embroidery from the back of the cloth. First outline the pencil drawing with stitches. Then fill in the outline with stitches.

Notes to the teacher:
1. Students shouldhave the opportunity to examine actual pieces of embroidery.
2. Students should be exposed to books of Indian textile embroidery.
3. In order to enable the student to reach a level of comfort with the technique of embroidery, he must have the opportunity to practice using a needle and thread.
4. This experience will be much easier for the student if you have purchased one embroidery hoop for each child. If it is your intention to teach embroidery on a consistent basis,

it is worth the investment.

5. You may choose to teach students the chain stitch, which is the most commonly used stitch in Indian embroidery.
6. The final products of each student's embroidered work can be sewn together to produce a class embroidered quilt. If this is done, it is best to choose a theme of the quilt before beginning the project. Some examples are: an alphabet quilt, an animal quilt, a peace quilt.
7. Until students are comfortable with the embroidery process, it is helpful for them to use knitting yarn instead of embroidery thread. Knitting yarn is thicker and less delicate than embroidery thread and allows the student a greater sense of control.

APPLIQUÉ

Appliqué or patch art involves stitching pieces of colored cloth on to a cotton background. In Gujarat, patch art is called "katab", which sounds like the English words, "cut up".

Much of the patch art of western India takes the form of canopies and friezes which, are displayed during celebrations or used to decorate animals.

The Muslim land owning caste, the Molesalaam, create appliqué pieces made with old cotton prints, silk prints, mashru, bandhani and patola cloth.

The Mahajan merchants are known for their appliquéd textiles. The artist cuts designs into red cloth squares revealing a white under layer of cloth, which forms the design.

The Oswal Banias of western Rajasthan create large wedding appliqué canopies. Their designs incorporate a white snow flake pattern on different colored backgrounds. The process of their art involves the use of folded paper patterns, which are then transferred to cloth. Many farming, herding and landowning castes, create large appliqués with animal, human, floral and snowflake designs.

Lesson Plan
Applique
Grades 4,5,6

Goal
Students will gain an understanding of the traditional textile arts of India.

Objective
Students will be able to apply the technique of applique by creating an appliqued piece of art.

Materials needed
A 12" by 12" piece of cloth
A variety of scrap pieces of cloth. These scrap pieces should be different colors and patterns. They should be large enough to accommodate the different sizes of the objects which appear in the student's drawings.
Scissors
Glue
Threads of many colors
Needles

Process
1. Student draws a picture. It may be a scene or it could be a single object, such as an apple tree, a snake or a flower.
2. Teacher checks the picture to see if it can be duplicated on fabric and transferred to cloth without extreme difficulty.
3. Student cuts out the objects in the drawing and traces them on to pieces of scrap cloth.
4. These cut out pieces are placed on the 12" by 12" piece of cloth.
5. The cut pieces can be secured with glue or secured by sewing or they can be glued and then sewn.

Notes to the Teacher:
1. Students with small motor difficulties may find it easier to glue the cut out pieces rather than sew them. He may also first glue the pieces and then stitch them around the edges.
2. I suggest that a fabric such as felt might be easier for a first applique experience. It is easier to cut and it responds to needle and thread nicely.
3. I suggest that the use of thread colors which contrast with the chosen fabrics, add beauty to the composition.
4. A variation on the Oswal Banais wedding appliques can be made by third grade students. Students can cut out snow flakes from white paper. These snow flakes can be mounted on a red background of paper or cloth.
5. Younger students can create applique compositions with paper rather than with cloth.

BLOCK PRINTING

The block print artist carves his design into wood. The carved design is covered with colored dye and then stamped or pressed on to cloth. Block printing allows the artist to repeat a design again and again.

Block printing is one of the traditional Indian art forms. Artists from northern Gujarat tend to use floral motifs influenced by Persian art as a basis for their designs. The artists from Barmer tend to use geometric shapes in their work.

Ajarakh cloth has a geometric design and is block printed on one or both sides. Usually indigo blue is the predominant color, which accounts for its name "azrak" which means "blue" in Arabic. Ajarakh cloth is worn by Muslim men during marriage ceremonies.

Lesson Plan
Printing
Grades 4,5,6

Goal
Students will gain an understanding of the traditional textile arts of India.

Objective
Students will be able to apply the technique of printing by creating a printed piece of art work.

Materials Needed
Styrofoam trays
Scissors
Pencil with a dull point or the pointed end of a paint brush
Brayer (roller for printing)
Tempera paint which should be the consistency of ketchup
Paper
Newspapers
Foil covered piece of cardboard or a cookie tray
Rolling pin or a unopened can of food

Process
1. Cut away the rim of the styrofoam tray.
2. Draw a picture into the tray with the pencil or the pointed end of a paint brush.
3. Spread the paint on to the foil covered cardboard or the cookie tray.
4. Roll the brayer in the paint.
5. Roll the painted brayer firmly over the etched styrofoam tray, coating the surface with paint.
6. Place a piece of clean paper over the painted styrofoam tray.
7. With the rolling pin or with the food can, roll over the clean side of the paper.
8. Carefully remove the paper.

Notes to the Teacher:
1. Always cover the work space with newspaper.
2. Be sure to remind the student to firmly press his etched design into the styrofoam tray.
3. The print design should not be drawn with a sharp pencil. The paint is likely to accumulate in a thin, fragile incised line, but is less likely to accumulate in a wide, thick line. The pointed, but thick end of a paint brush will produce a strong, wide line, which will be best for the transfer of the design.
4. This project can be easily adapted for use in first through third grade. Students can print with found objects, such as the circular rim of a toilet paper roll or a potato masher. Students can also carve into potatoes with plastic knives. Potato prints can be very beautiful. Students can also make prints of their hands.

WEAVING

Through the process of weaving, two sets of threads are interlaced to make cloth. Thread or yarn is strung in parallel, vertical lengths, across a loom. This thread or yarn is called the warp. As the artist weaves, weft threads are passed over and under the warp threads. Different combinations of this basic process, produce a variety of patterns.

A brocade is a form of stitching in which the threads are layered. This layering produces dimension and forms raised designs. Usually, heavy threads are used in brocades.

Silk threads which are coated with gold and silver produce brocades of startling beauty. The traditional way of producing gold thread is to fuse actual gold on to a silver bar in a hot furnace. The bar is then pulled through dies of smaller and smaller diameter, until a thread of the thinness of a human hair is produced. The thread is then beaten flat and coiled around a silk thread. Since the time of the Mughal Empire, Gujarat has been known for its exquisite brocades.

The Mughal Empire, supported and encouraged the production of woven Kashmir shawls. The smooth, soft, wool was made from rare, Asian goats. These intricately designed shawls are still being produced.

Patola is double tie-dyed, ikat, silk, sari cloth. The warp and weft threads are separately dyed before weaving. It can take six months to dye and weave a Patola cloth, which will then sell for about $1,500. Patola cloths are difficult to weave and require meticulous patience.

Historically Patola cloths were considered sacred and were cherished as family heirlooms. Some were designed with symbols of reverence such as the lion, elephant and the lotus flower.

The domestic textile art of the Naga women is woven for practical, everyday use. The Naga woman weaves the clothing which is needed for her family. The weaving technique combines warp and weft yarn weaving and loom embroidery. Loom embroidery involves the intermittent insertion of separate pieces of threads into the weaving.

Islamic laws prohibit men from wearing pure silk. The threads of mashru cloth are dyed before weaving. The weft threads are cotton and the warp threads are silk. This produces a fabric which has a top surface of silk and an under surface of cotton. The cotton under surface is the only part of the fabric which touches the skin. Since orthodox Mulsim men are forbidden to wear silk upon their skin, they are "permitted" to wear mashru cloth. The Arabic the word "mashru" means "permitted".

Lesson Plan
Weaving
Grades 4, 5, 6

Goal
Students will gain an understanding of the traditional textile arts of India.

Objective
Students will be able to apply the technique of weaving by creating a woven piece of art.

Materials Needed
A loom
Yarns of many colors
Scissors
Ruler
A blunt tapestry needle
A wide toothed comb

Process
1. Thread a blunt tapestry needle with yarn. The thread on this needle is the weft thread. With your threaded needle, go over the first warp thread, and then under the second warp thread, and then over the third warp thread and under the fourth warp thread. Continue this process until you have reached the end of the warp.
2. When you have finished weaving one row of yarn, reverse the direction and continue the next row of weaving. This time, alternate what you did in the row above. If the last weft thread went under the warp thread, then the first weft thread in this row, should go over the warp thread.
3. The third row repeats the first row and the fourth row should repeat the second row. This over-under pattern is called the plain weave. You can help your students by saying, "over one, under one, over one, under one".
4. On occasion, take your wide toothed comb, and gently comb the weft threads together. This is called, "beating in the weft". Beating the weft keeps the weaving threads organized and in place.
5. When you are finished weaving the entire piece, the end of the weft thread should be tucked into the woven piece. The warp threads are then cut and knotted. After knotting, the remaining yarn can function as fringe, or, if the artist does not want fringe, the yarns can be cut short

Notes to the teacher:
Directions for making a simple, inexpensive loom.
1. Take a piece of cardboard which is at least 8" by 8". The first step is the creation of the warp grooves. Cut small slits, about $\frac{1}{4}$" apart, into the top and bottom edges of the cardboard. These slits will secure the warp threads,

so that they will not slip out of place when the student is weaving.

2. After the warp grooves have been cut, you will begin the warping of the loom. Make a knot on the end of the yarn and slide the knot into the upper left hand notch, pulling the yarn down into the slit. Begin to wind the yarn from the front of the cardboard to the back of the cardboard, each time securing the yarn in the slits which you have cut. When you are finished, secure the end of the yarn into the final slit, so that it will not unravel. The loom has been created and is ready for weaving.
3. As a classroom project, it is fun to create a woven classroom tapestry. This is done by tying all student pieces together and forming a woven patchwork. When the pieces are removed from the looms, the cut warp threads from each piece of student work, can be tied together. This woven patchwork piece, can be hung in the classroom or in the school hallway. The irregularities of student work will add to the beauty of the piece.
4. Beads can be tied to the warp ends. This will add to the beauty of the woven pieces.
5. First through third grade can create paper weavings. This can be done by cutting strips of paper, which can be woven through a paper loom.
   A paper loom can be easily made by folding a 9" by 12" paper in half. Cut 12 to 15 lines or strips, from the folded side of the paper to a margin 1" from the edge of the paper. When the folded paper is opened, the warp strips of cut paper, form a paper loom. The strips of cut paper can be woven over and under these cut warp strips.

Vocabulary

Warp-The warp threads are the threads which go up and down, or vertical, on the loom

Weft-The weft threads are the threads which go from left to right, or horizontal, on the loom.

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APPENDICES

APPENDIX

TRANSLATION of the account given by the Jesuit priest, Father Cœurdoux, of the Indian traditional methods of producing fast-coloured decorated cottons. Included in the collection of letters printed under the title of *Lettres Edifiantes*.

Aux, Indes Orientales,
c. 18 Janvier, 1742.

MON REVEREND PERE,

You have asked me in many of your letters to tell you of any discoveries I might make in this part of India, and I have not forgotten your request. You said you were sure that information might be obtained here which ought to be known in Europe, instancing anything which would contribute towards the advancement of Science and the perfection of Art.

I should have done this sooner, if my work had not occupied almost all my time. At last, having a little leisure, I have made use of it to find out how the Indians make those beautiful fabrics which are dealt in by the Trading Companies which cross the ocean from the most distant parts of Europe to obtain them from these remote regions.

These cloths are chiefly valuable because of the "vivacity" (if I may so express it) and the lasting quality of the colours with which they are dyed, which, far from deteriorating when washed, only become more beautiful. It is this quality, which Europeans have not yet succeeded in imitating, that I now have learned how to obtain.

This is owing to no lack of research on the part of our able men of science, nor of want of skill on that of our workpeople, but it really appears that the Author of Nature, wishing to compensate the Indies for the advantages which Europe possesses over these

countries, has given them ingredients (more especially water) which contribute to the beauty of the mixture of dyeing and painting by which these Indian cloths are ornamented.

What I am going to tell you, Reverend Father, about these Indian Paintings has been learnt from certain neophytes skilled in this kind of work whom I have recently baptised. I have questioned them on various occasions, and apart from one another, and it is their replies that I send to you.

I

Before beginning to make painted linens it is necessary to make the following preparations :—

1. Take a piece of new linen, fine and closely woven (the most usual length is nine cubits). Half bleach it. (I will say later how to do this.) Take about twenty-five of the dry fruits called Cadou, or Cadoucaïe; or, to be more exact, the weight " palam." This Indian weight equals an ounce and an eighth, hence fourteen palams and a quarter equal a pound. Break up the fruit and remove the stones, which are of no use.

2. Reduce the dry fruits to powder (in order to do this they use a stone cylinder in the same way that pastrycooks do when they roll out their paste).

3. Sieve this powder, and put two pints, or thereabouts, of Buffalo milk to it, increasing the quantity of the milk and the weight of the Cadou according to the quantity of the cloth.

4. Soak the cloth in it until it is thoroughly wet through with the milk. You then remove it, and wringing it out, put it in the sun to dry.

5. The following day you rinse the cloth in ordinary water, wring out the water, and after drying it in the sun, leave it in the shade for a quarter of an hour at least.

After this preparation, which may be called internal, you pass

to another which I may call external, because it concerns the surface of the cloth.

In order to render it smoother, and to facilitate the use of the paint-brush, they fold it in four, or in six, and with one piece of wood they beat it on another very smooth piece, taking care to beat it equally all over, and when one part is sufficiently beaten, they re-fold it, and recommence the operation.

Here, Reverend Father, it is well to make a few notes about Cadou which you may find of some use.

1. The fruit is found in woods on a medium-sized tree. It is found nearly everywhere, but especially in Mallaialam, a mountainous district, as the name signifies, which occupies a considerable part of the coast of Malabar.

2. This dry fruit, which is as big as a nutmeg, is here used by the doctors, and enters especially into remedies given to newly confined women.

3. It is extremely bitter; however, when one keeps a piece of it in the mouth for some time it acquires, some say, a taste of Liquorice.

4. If, after having moistened it slightly in the mouth, and then broken a piece, you take it between the fingers, you find it very sticky. It is largely to these two qualities—bitterness and stickiness—that they attribute the fastness of Indian colours. But *especially* to the bitterness. Such, at least, is the idea of the Indian painters.

For a long time the art of fixing colours has been sought for in Europe, to give them that fastness which is so admired in Indian cloths. Perhaps it may be mine to discover the secret; at least for some colours, by making known Cadoucaïe, and above all its principal quality of bitterness.

May we not find in Europe fruits similar to these? Gall nut, dried while immature; the rind of the Pomegranate may have many of the qualities of Cadou.

I add to what I have just said some experiments I have made with the Cadou.

1. Lime, steeped in an infusion of Cadou, gives a green. If there be too much Lime it gives a brown. If one pours on this brown dye a large quantity of the infusion, the colour appears whitish at first, and after a little the Lime precipitates itself to the bottom of the receptacle.

2. White linen soaked in a strong infusion of Cadou becomes of a very pale yellowish tint, but when mixed with Buffalo milk the linen comes out a rather pale orange.

3. Having mixed a little European ink with an infusion of Cadou, I remarked that in many places there was a bluish film similar to what one sees in ferruginous waters.

It would be easy, even in Europe, to make experiments with the Cadou itself, as it would be easy to import it from the Indies. This fruit is very cheap, and one gets thirty of them for a *sol* of our money.

The reason they prefer Buffalo milk to that of the cow is because it is richer and more unctuous.

This milk has the same effect on cloth as gum, and the other preparations that they use on paper in order that it may not blot. However, I find that our printer's ink used on a cloth prepared with Cadou does spread, and even penetrates to the other side, and the same thing happens with the black paintings of the Indians.

It must be noted that every kind of wood is not suitable for beating and polishing the cloths. Generally the wood upon which they are placed, as well as the beater, is made from the Tamarind Tree, but sometimes they use a tree called "Porchi," because these woods are extremely close-grained when old.

The beater is called a Cottapouli; it is round and about a cubit long, and as thick as a man's leg, except at the handle end.

Two workmen face each other, and beat the cloths with

alternating strokes. The experienced eye informs them when the cloth is sufficiently polished and lissom.

II

When the cloth has been prepared thus, the flowers and other things to be painted on it must be drawn. The Indian work-people have no peculiar method. They use the same as our embroideresses. The painter draws his design on paper, and pierces the principal lines with a fine needle. Placing the paper on the cloth he pounces the design. That is to say, he passes charcoal powder tied in a knot of muslin over the pricked holes, and thus the design is transferred to the cloth. Any kind of charcoal will do, except that of the Palm, which, say the Indians, tears the cloth.

Lastly, they follow these lines with a paint-brush and black or red colour, and the work is outlined.

III

Now comes the task of adding colour to the design. The first which is applied is the black. This colour is not much used except for certain details, and the stalks of flowers. It is prepared thus :—

1. They take some iron dross, and knocking the pieces together to cause the less solid parts to fall off, they retain the large pieces, which are about nine to ten times the size of an egg.

2. They put with it several pieces of iron, old or new, it does not matter which.

3. Having placed the iron and the dross on the ground, they light a fire above it. The best fire is made with Banana leaves.

4. They put the iron and dross into a vessel which holds about eight to ten pints, and pour on to it hot Kanji. This is the water

in which Rice has been boiled, and care has to be taken that there is no salt in it.

5. After having exposed the whole to the sun for a day, the Kanji is thrown away and the vessel filled with Palm wine or Coco wine, known as Callou.

It is again placed in the sun for six to eight consecutive days, when the colour used to paint black is ready for use.

There are some observations to make on this preparation.

The first is that one must not put more than four or five pieces of iron into eight or nine pints of Kanji, otherwise the dye will redden and cut the cloth.

Second, with regard to the quality of the Palm, or Coco wine, which sours easily in a very short time, they use it instead of yeast to raise their dough.

The third is that they prefer the wine of the Coco tree to that of the Palm. And the fourth, that failing these they use Kevarou, which is a small grain used as food by many people of this country. This grain resembles Turnip-seed in colour and size, but the stem and leaves are quite different. They also employ the Varagou, another native fruit, in preference to the Kevarou. They take two handfuls, and cook them in water which they pour into the vessel containing the iron and the dross. They add lumps of Palm sugar about the size of two or three nutmegs, taking care not to put more, or the colour will not stand.

The Fifth is that to improve the colour they mix the Callou with the Kevarou, or the prepared Varagou.

The Sixth, and last, remark is that this colour does not appear very black, and that it is not fast, except on a cloth prepared with Cadou.

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IV

After having drawn, and painted with black, all the parts required, the red outlines of the flowers, and of other things which should be drawn in this colour, are added.

The blue, which requires a great deal of preparation, is also applied.

Firstly the cloth is put into boiling water, and left for half an hour. If two or three Cadous are added to the water the colour will be improved. The cloth is soaked all night in water in which the droppings of sheep or goats have previously been steeped. Next day it is washed, and exposed to the sun.

When the Indian painters are asked what purpose is served by this last operation, they reply that it removes the qualities imparted by the Cadou, and that if this had been retained, the blue, which is now about to be applied, would become black.

Another reason for this operation is that it whitens the cloth, for, as before remarked, it was only half bleached at the beginning. In exposing it to the sun, it should not get entirely dry, but should be sprinkled with water from time to time through a whole day. Then it is beaten on a stone, but not with a beetle, as in France. The Indian method is to fold it several times, and to beat it heavily with a stone, using the same movements as do locksmiths and blacksmiths, when striking their large hammers on an anvil. When the cloth is beaten enough in one part they continue beating it in another. Twenty or thirty blows are enough at this time. When this is done the cloth is again soaked in rice-water. If they have it they put some Kevarou to boil on the fire as if it were to be cooked, and before the water thickens too much they soak the cloth, remove it, dry it, and beat it with the Cottapouli as they did at the first operation in order to make it smoother.

As the blue is not applied with a brush, but by soaking the cloth in prepared Indigo, it is necessary to coat the cloth with wax all

over except on those parts which are already black, and those where blue or green are to appear.

This wax is applied with an iron brush, as lightly as possible, on one side only, taking care that no part remains uncoated, except those that I have mentioned. Otherwise there will be blue marks which are uneffaceable. The cloth is then exposed to the sun, taking care that the wax only melts enough to penetrate to the other side. It is then turned over, and rubbed briskly with the hand.

The better way is to employ a round-bottomed copper vessel, which spreads the wax all over, even to those parts which on the other side should be dyed blue. This preparation being completed the painter hands on the cloth to the blue dyer, who returns it after some days, for it must be noted that it is not the ordinary painters, but special workpeople, or dyers, who carry out this work.

Having asked the painter if he knew how to prepare the Indigo, he told me he did, and described it to me in the following manner. Perhaps you may be able to compare it with the methods used in the American Islands. Here they take the leaves of the Averei, or of the Indigo, well dried, and reduced to powder. This powder is put into a large vessel filled with water. They beat it in the sun with a bamboo split into four which has the four extremities extended apart.

The water is then allowed to escape through a little hole in the bottom of the vessel, at the bottom of which is the indigo. It is taken out and broken into pieces the size of a Pigeon's egg. They then spread ashes in the shade, and on these ashes they lay a cloth upon which the Indigo dries. It is then ready for use. After that it only remains to prepare it for the cloths which are to be dyed.

The workman, having powdered sufficient Indigo, puts it in a large earthen vessel which he fills with cold water, adding to it a proportionate amount of Lime, also powdered. Then he examines

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the Indigo to make sure it is not sour—in which case he adds more Lime, as much as is necessary to make it lose this smell.

Then taking some grains of Tavarei, about a quarter of a bushel, he boils them in a bucket of water for a day and a night, keeping the cauldron full of water. He then turns all (grain and water) into the vessel containing the Indigo. This dye is kept for three days, care being taken to mix it well together, stirring it three or four times a day with a stick. If the Indigo again becomes sour, more Lime is added.

The blue dye being thus prepared, the cloth is immersed after being folded in two in such a way that the right side is outward, and the wrong side within. It is left to soak for about an hour and a half, then it is removed to a suitable place. You can see, therefore, that the Indian cloths should rather be called " dyed " than painted.

The lengthiness and variety of the processes for blue dyeing gave rise to a difficulty which I laid before the painter.

" Could not," I said, " all the flowers be painted blue with a brush, especially when there are only a few of them in the piece ? "

" It certainly could be done," he replied, " but the blue would not be fast, and after being washed two or three times would disappear." I asked him to what he attributed the fastness of the colour, and he unhesitatingly replied to the Tavarei seeds. This seed is native to the country; it is light brown, or olive colour, cylindrical, a line long, and split at the end. It is difficult to break with the teeth, insipid, and leaves a slight bitterness in the mouth.

After the blue, the red must be added, but first the wax must be removed from the cloth. It must be bleached and prepared to receive this colour.

The way to remove the wax is to put the cloth in boiling water; the wax melts, the fire is slackened, in order that it may solidify, and the wax is removed very carefully with a spoon; the water is again brought to the boil, and what remains of the wax is removed.

Although the wax becomes very dirty it may be used again for the same purpose.

In order to bleach the cloth it is washed in water, and beaten nine or ten times on a stone, and immersed in fresh water in which some sheep droppings have been soaked. It is again washed, and spread out in the sun for three days, and sprinkled with water as before.

They soak an earth called " Ola," which is used by the washermen, in cold water, and immerse the cloth in it for about an hour, after which they light a fire under the vessel, and when the water begins to boil they take out the cloth, and wash it in a pond, on the edge of which they beat it four hundred times on a stone, and then wring it thoroughly. Then it is soaked for a day and a night in water in which has been mixed a little of the droppings of a Cow, or female Buffalo. After that it is again washed in the pond and spread for half a day in the sun, watering it slightly from time to time. It is again put on the fire in a vessel of water, and when the water boils it is once more washed in the pond, beaten a little, and dried. Then, in order to make the cloth ready to receive the red colouring, the operation of Cadoucaïe must be repeated as before. That is to say, the cloth is soaked in a simple infusion of Cadou; it is then washed, beaten on a stone and dried; after this it is soaked in Buffalo milk, in which it is stirred, and rubbed with the hands in order that it may be thoroughly wet through. They then remove it, wring, and dry it.

Then, where it is necessary to have white marks, such as pistils, stamens, and other details, in the red flowers, they are painted with wax, after which the red dye, which has been previously prepared, is painted with an Indian brush.

The red is often applied by children, as it is not a difficult task, unless a very perfect piece of work is required.

Let us now see how this red colour is prepared. Take bitter water, that is to say, the water of certain wells which have this taste. Into two pints of water put two ounces of powdered Alum,

add to it four ounces of the red wood called Vartanqui or Sapan wood, also powdered. Let it stand in the sun for two days, taking care that nothing falls in to soil it, or the colour will be weakened. If the red is to be deeper add more alum, if lighter add more water, in order to obtain the different tints and shadings of colour.

V

To obtain a colour like wine lees, rather inclined to violet, you must take one part of the red, made as just described, and one part of the black described earlier. Add an equal part of rice-water which has been kept three months, and mix it until the required colour results.

There is a ridiculous superstition amongst these Gentiles on the subject of sour rice-water. It is that anyone can use it himself any day of the week, but on Sunday, Thursday, and Friday they refuse to give it to anyone who is short of it, because they say it would drive their God out of the house.

When Kanji vinegar is unobtainable, they use the vinegar of Callou, or of Palm wine.

VI

Different colours may be made based on red which it is useless to describe here. It is enough to say that they are painted the same time as the red, that is to say, before passing to the operation of which I am going to speak, after I have made some observations on the foregoing.

1. Wells of bitter water are not common, even in India. Sometimes there is only one in a town.

2. I have tasted this water, and do not find the quality attributed to it, but it seems inferior to ordinary water.

3. Some people say bitter water is used to improve the colour of the red, but rather more commonly it is said that it is used to make it fast.

4. It is from Acken that fine quality Alum and Sapan wood is brought to the Indies.

But whatever virtue lies in this bitter water it would neither make the colours fast nor beautiful if they did not add the dye of Imbouré.

This is more commonly called Chaïaver, or Chaïa root. But to make use of this the cloth must be washed in the pond in the morning, dipping it several times in order to soak it thoroughly, which is not easy because of the slight greasiness caused by the Buffalo milk previously used. It is beaten thirty times, and half dried. Whilst the cloth is being prepared they also prepare the Chaïa root thus: It is dried, and reduced to a very fine powder in a mortar of stone, not wood, and a little bitter water is thrown in from time to time.

Take about three pounds of this powder and add it to two buckets of tepid water, stirring it a little with the hand. This water becomes red, but rather an ugly colour; its purpose is to bring other reds to perfection. The cloth must be plunged in this, and stirred and turned for half an hour, while the heat is increased beneath the vessel, and when it becomes too hot for the hand, those who take particular pains that their work should be clean and perfect, remove the cloth, wring and dry it. The reason of this is that during the painting of the red it is difficult to avoid making blots here and there. It is true that the painter does his best to remove these, as one might do when writing, but there still remain some traces which are rendered more apparent by the infusion of Chaïa root, and therefore they take out the cloth as I have said, and remove them as best they can with a half lemon.

This done the cloth is put back into the dye, and the heat

increased until the hand can bear it no longer, turning and returning the cloth for half an hour.

At evening the fire is made up, and the dye is boiled for an hour, or thereabouts, the cloth is removed, wrung out, and kept damp until the next day.

Before passing on to the other colours it is well to say something about Chaïa. This plant is wild, and it is not necessary to sow it to supply the quantity required. It grows about half a foot high; the leaf is light green; about two lines wide and five or six long; the extremely small flower is bluish. The seed is about the size of that of tobacco. This little plant has a tap root running sometimes to a depth of nearly four feet, but those that are about a foot long are the best. Though the main root is so long, the side roots are few and small. It is yellow when fresh, becoming brown on drying. It gives a red colour to water only when fresh. On this head I noticed a point which surprised me. I had made a red infusion which was accidentally spilt during the night. On the following day I was surprised to find that at the bottom of the vessel some drops of yellow liquid had gathered. I suspected that some foreign body had caused this change of colour, and spoke of it to a painter, who told me that it only indicated that the Chaïa was of good quality, and that the water often takes the colour of saffron. I also noticed a surface film of a very fine violet on the overturned vessel. This plant is sold dry in bunches; the tops are cut off, as only the roots are used.

As the cloth had been entirely immersed in the dye, and had soaked in the colour, the following operations can be carried out without any danger of damaging the reds.

They are the same that have been already described, that is to say, the cloth is washed in the pond, beaten ten or twelve times on the stone, bleached with sheep droppings, and on the third day soaked, beaten, and dried, being sprinkled with water from time to time. It is kept damp during the night, and washed the next day, and dried as on the day before. At last, at noon, it is

washed in hot water to remove all soap, and any dirt which had attached itself to it, and thoroughly dried.

VII

The green colour is prepared thus : Take a palam, or a little more than an ounce of Cadou flowers, as much of Cadou, a handful of Chaïaver, and, if a very fine green is required, a Pomegranate rind.

Powder them, and put them in three bottles of water, and boil them until the quantity is reduced to three quarts, and pour into a vessel through a linen cloth. Add half an ounce of Alum in powder, stir for some time, and the colour is ready.

Painted over blue, this colour gives green. For this reason the worker who dyes blue is careful when painting on the wax to leave those parts clear of wax which should be green, so that the cloth already dyed blue should be in a proper state to receive the green in its turn. If not painted over blue, it would give yellow on a white cloth.

This colour, however, is not fast, like red and blue, and after several washings disappears, leaving only blue. There is, however, a way of fixing the colour so that it will last as long as the cloth itself.

Take a Banana bulb, peel it while fresh, and express the juice. Add four or five spoonfuls of this juice to a bottle of green dye. It will make the green permanent, but will spoil the beauty of the tint somewhat.

VIII

There remains but the yellow, which will not require much explanation. The same dye used for green by painting over blue, serves for yellow by painting on a white ground, but it is not permanent.

However, if but little soap be used in washing these cloths,

or if they are washed in water acidulated with sour milk, or lemon juice, or soaked in water in which cow droppings have been mixed and passed through a linen cloth, these fugitive colours will last a long time.

IX

In conclusion a few words may be said about the pencils used by the Indians. They are made of a little piece of Bamboo, pointed, and slit for about an inch from the end. Fastened round them is a piece of stuff soaked in the colour they are using, which is squeezed to make it run as required.

For wax they use an iron pencil about three finger-breadths long, which is thinner towards the top, and is inserted in a bit of wood which forms a handle.

It is slit at the bottom, and forms a circle in the middle round which is fixed a bundle of hair about the size of a nutmeg, soaked in hot wax which runs little by little down to the point of the pencil.

Such, Reverend Father, is all I have been able to gather as to the fabrication of the painted cloths of the Indies.

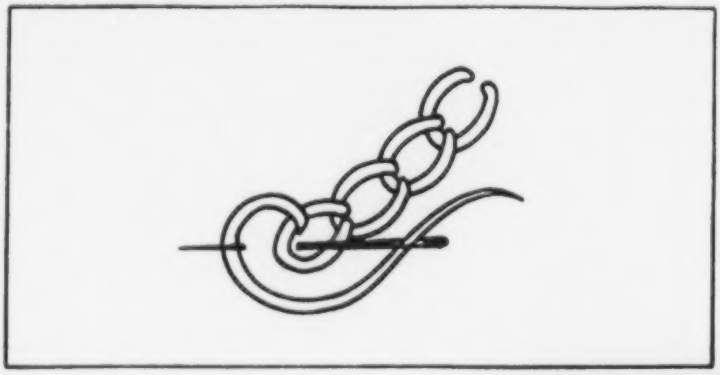
I do not know if I have been more successful in my discoveries than my predecessors, but, as they neither knew the language, which is so absolutely necessary when conversing with the painters, nor the customs of dealing with them, and as their position might naturally cause suspicion in the timid natives, I doubt their having carried out their orders as to this matter successfully.

I do not wish to guarantee the exact truth of all that I have reported; it would be difficult to avoid allowing some errors to creep in when dealing with those who know better how to work than how to explain, but, as I have consulted many painters, it would be difficult for them all to conspire to deceive me, and it is unlikely that I am far from the truth.

I am, etc., etc.

Chain stitch

This stitch can be used either as an outline or a filling stitch. As a filling it can be used to simply follow the basic outline or in such a way that it indicates contours



Chain stitch

Detail of a trade fabric, worked with crewel wool on Dusatti, showing chain stitch used as a filling stitch, following the outline Art work

Ohms, Margaret.

Ethnic embroidery

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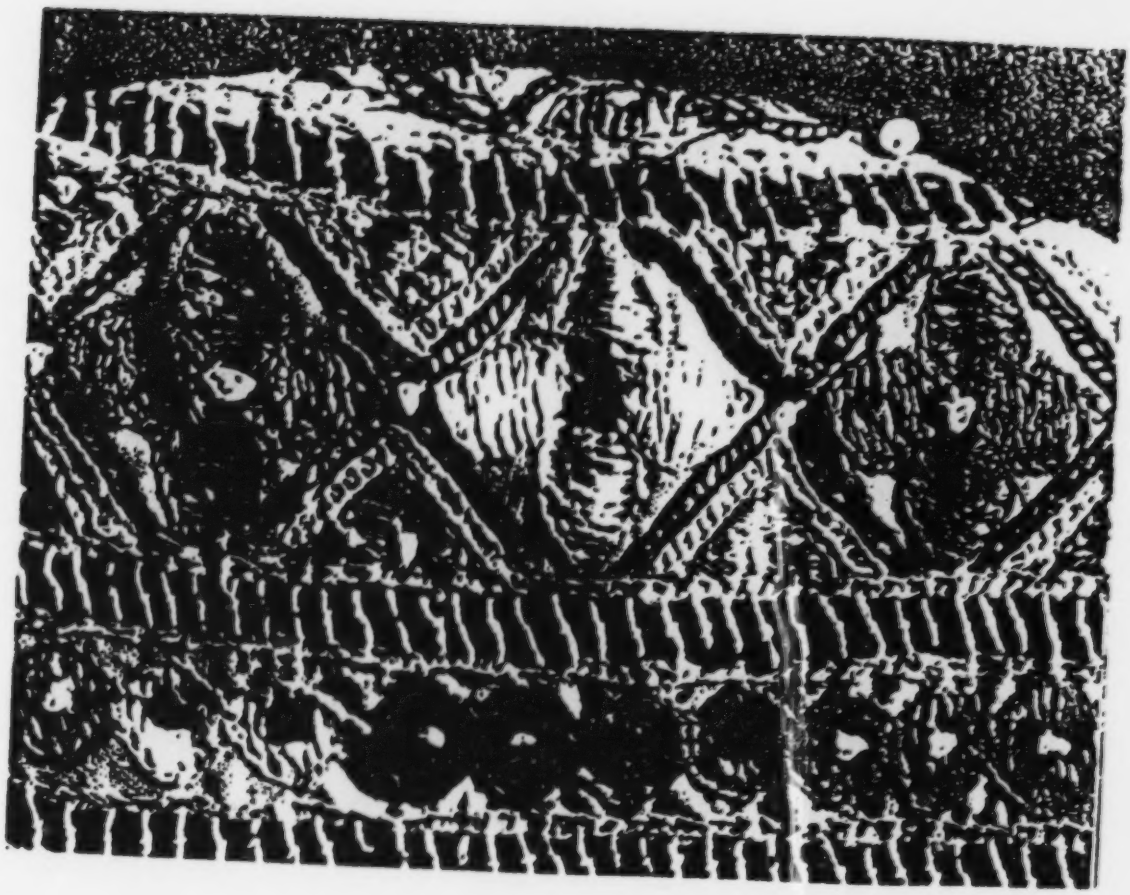
Ethnic Embroidery

An introduction with special reference to the embroidery of China, India, Palestine and Yugoslavia

MARGARET OHMS



Enlarged detail of Pathan cap worked in silk floss on yellow cotton, in chain stitch, Oriental stitch couching Yemeni knots and Turkmen stitch. North-west India, mid twentieth century

Ohms, Margaret.

Ethnic embroidery

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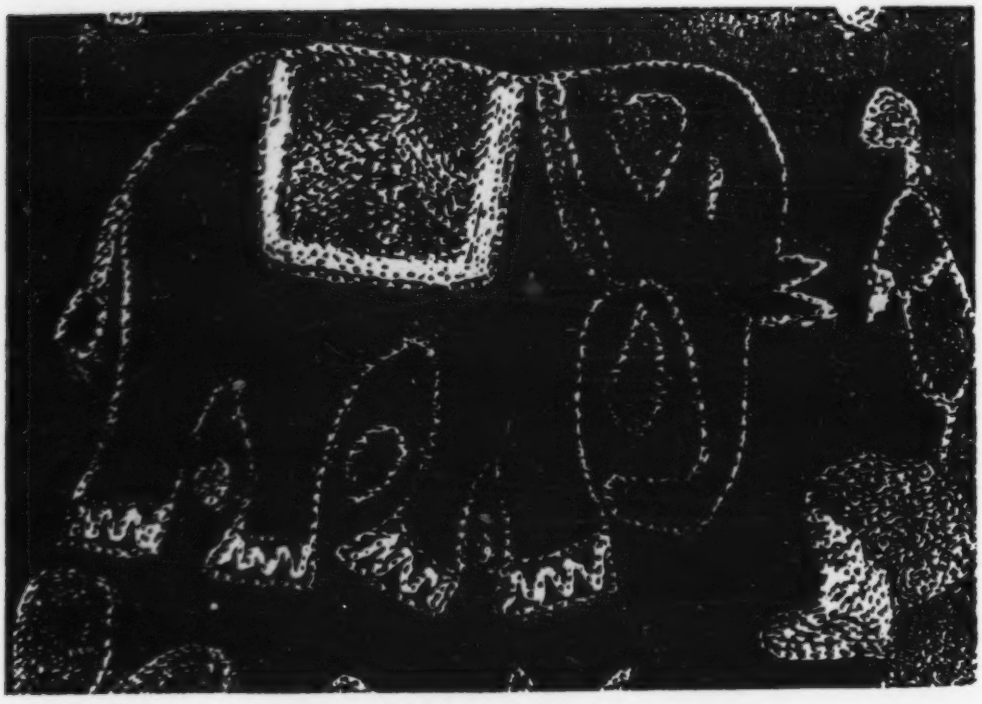

Detail from an ari of an elephant, worked in chain stitch in twisted silk thread on cotton ground. India, second half twentieth century

Ohms, Margaret.

Ethnic embroidery

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SLIDE DESCRIPTIONS

1. Blue tie-dye shawl, probably Saurashtra
2. Green tie-dye skarf, origin unknown
3. Detail of green tie skarf
4. Purple tie-dye skarf, origin unknown
5. Black tie-dye skarf, origin unknown
6. Embroidered tiger square, Kashmir
7. Embroidered eagle square, Kashmir
8. Embroidered wall hanging, purchased in the streets of New Delhi, origin unknown
9. Mirrored and embroidered frieze hanging, Rajasthan
10. Detail of frieze hanging
11. Embroidered and mirrored cloth, purchased on the streets of New Delhi, origin unknown
12. Detail of embroidered cloth
13. Cotton embroidered cloth, Punjab
14. Silk embroidered cloth, Punjab
15. Embroidered cloth, Gujurate
16. Detail of embroidered cloth
17. Applique wall hanging, produced for tourist trade in New Delhi
18. Detail of appliqued wall hanging
19. Block printed, red, elephant cloth, Jaipur
20. Black and white, block printed bed covering, Sanganeer Village, Jaipur
21. Pink and blue, block printed and painted cloth, Jaipur
22. Gold printed and painted cloth, Rajastan
23. Multi-colored woven cloth, Nagaland
24. White woven cotton cloth, New Delhi
25. Painted elephant on silk cloth, New Delhi
26. Red cotton shawl, Rajastan
27. Blue tie-dye, cotton blouse, Jaipur
28. Orange printed and stitched cotton square, Jaipur
29. Art students in Chicago, Illinois, U.S.A., using wooden block print forms which were purchased in India.
30. Chicago art students
31. Chicago art students
32. Chicago art students
33. Chicago art students
34. Chicago art students